

S/N Unknown

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	Kie Y. Ahn et al.	Examiner:	Unknown
Serial No.:	Unknown	Group Art Unit:	Unknown
Filed:	Herewith	Docket:	303.533US2
Title:	COMPACT SYSTEM MODULE WITH BUILT-IN THERMOELECTRIC COOLING		

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Patent Application  
Assistant Commissioner for Patents  
P.O.Box 1450  
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

Pursuant to 37 C.F.R. § 1.98(d), copies of the listed documents are not provided as these references were previously cited by or submitted to the U.S. Patent Office in connection with Applicants' prior U.S. application, Serial No. 09/144307, filed on August 31, 1998, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

KIE Y. AHN ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402  
612-373-6904

Date

June 26, 2003

By

Daniel J. Kluth

Reg. No. 32,146

"Express Mail" mailing label number: EV332569635US

Date of Deposit: June 25, 2003

This paper or fee is being deposited on the date indicated above with the United States Postal Service pursuant to 37 CFR 1.10, and is addressed to The Commissioner for Patents, Mail Stop Patent Application, P.O.Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Application Number Unknown

Filing Date Even Date Herewith

First Named Inventor Ahn, Kie

Group Art Unit Unknown

Examiner Name Unknown

Sheet 1 of 5

Attorney Docket No: 303.533US2

**US PATENT DOCUMENTS**

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
	US-3,923,567	12/02/1975	Lawrence, J. E.	156	7	08/09/1974
	US-3,959,047	05/25/1976	Alberts, G. S., et al.	156	8	09/30/1974
	US-3,982,268	09/21/1976	Anthony, , et al.	357	55	03/14/1975
	US-4,081,701	03/28/1978	White Jr., , et al.	307	355	06/01/1976
	US-4,394,712	07/19/1983	Anthony, T. R.	361	411	03/18/1981
	US-4,595,428	06/17/1986	Anthony, , et al.	148	187	01/03/1984
	US-4,631,636	12/23/1986	Andrews, D. M.	361	385	03/26/1984
	US-4,653,025	02/24/1987	Minato, , et al.	365	154	12/21/1984
	US-4,710,798	12/01/1987	Marcantonio, G.	357	80	09/12/1985
	US-4,739,446	04/19/1988	Landis, R. C.	361	385	05/05/1986
	US-4,870,470	09/26/1989	Bass Jr., Roy S., et al.	357	23.5	10/16/1987
	US-4,977,439	12/11/1990	Esquivel, A. , et al.	357	49	04/03/1987
	US-5,061,987	10/29/1991	Hsia, Yukun	357	71	01/09/1990
	US-5,079,618	01/07/1992	Farnworth, W. M.	357	81	07/02/1991
	US-5,153,814	10/06/1992	Wessely, H.	361	382	07/18/1991
	US-5,229,327	07/20/1993	Farnworth, W. M.	437	209	10/21/1991
	US-5,258,648	11/02/1993	Lin, P. T.	257	778	11/27/1992
	US-5,258,658	11/02/1993	Lin, P.	257	778	11/27/1992
	US-5,275,001	01/04/1994	Yokotani, , et al.	62	3.7	09/11/1992
	US-5,313,361	05/17/1994	Martin, J. H.	361	699	03/29/1993
	US-5,317,197	05/01/1994	Roberts,	257	401	
	US-5,343,366	08/30/1994	Cipolla, T. M., et al.	361	785	06/24/1992
	US-5,352,998	10/04/1994	Tamino, Noriyuki	333	247	10/01/1993
	US-5,362,976	11/08/1994	Suzuki, Katsuhiko	257	81	10/26/1992
	US-5,391,917	02/21/1995	Gilmour, Richard , et al.	257	690	05/10/1993
	US-5,392,407	02/21/1995	Heil, , et al.	395	325	12/24/1992
	US-5,409,547	04/25/1995	Watanabe, , et al.	136	204	09/30/1993
	US-5,415,699	05/16/1995	Harman, T.	138	238	01/12/1993
	US-5,432,823	07/11/1995	Gasbarro, , et al.	375	356	01/07/1994
	US-5,438,224	02/13/2002	Papageorge, M. V., et al.	257	777	12/01/1993
	US-5,468,681	11/21/1995	Pasch, Nicholas F.	437	183	06/15/1994
	US-5,532,506	07/02/1996	Tserng, H. Q.	257	276	11/14/1994
	US-5,567,654	10/22/1996	Beilstein Jr., K E., et al.	437	209	09/28/1994
	US-5,587,119	12/24/1996	White, D. M.	264	104	05/26/1995
	US-5,598,031	01/28/1997	Groover, , et al.	257	668	10/25/1994
	US-5,610,366	03/11/1997	Fleurial, , et al.	136	202	01/28/1994

**EXAMINER****DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 806. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">Complete if Known</td> </tr> <tr> <td style="width: 60%;">Applicant Number</td> <td>Unknown</td> </tr> <tr> <td>Filing Date</td> <td>Even Date Herewith</td> </tr> <tr> <td>First Named Inventor</td> <td>Ahn, Kie</td> </tr> <tr> <td>Group Art Unit</td> <td>Unknown</td> </tr> <tr> <td>Examiner Name</td> <td>Unknown</td> </tr> </table>	Complete if Known		Applicant Number	Unknown	Filing Date	Even Date Herewith	First Named Inventor	Ahn, Kie	Group Art Unit	Unknown	Examiner Name	Unknown
Complete if Known													
Applicant Number	Unknown												
Filing Date	Even Date Herewith												
First Named Inventor	Ahn, Kie												
Group Art Unit	Unknown												
Examiner Name	Unknown												
Sheet 2 of 5	Attorney Docket No: 303.533US2												

	US-5,618,752	04/08/1997	Gaul, S. J.	438	626	06/05/1995
	US-5,622,875	04/22/1997	Lawrence, J. E.	438	691	08/17/1994
	US-5,637,828	06/10/1997	Russell, E. J., et al.	174	52.2	06/07/1995
	US-5,646,067	07/08/1997	Gaul, S. J.	437	180	06/05/1995
	US-5,656,548	08/12/1997	Zavracky, Paul M., et al.	438	23	09/19/1995
	US-5,657,481	08/12/1997	Farmwald, , et al.	395	551	11/15/1996
	US-5,682,062	10/28/1997	Gaul, Stephen J.	257	686	06/05/1995
	US-5,692,558	12/02/1997	Hamilton, R. E., et al.	165	80.4	07/22/1996
	US-5,699,291	12/16/1997	Tsunemine, Y.	365	149	08/01/1996
	US-5,714,791	02/03/1998	Chi, C. , et al.	257	467	06/27/1996
	US-5,747,728	05/05/1998	Fleurial, J. , et al.	136	203	03/29/1995
	US-5,753,529	05/19/1998	Chang, , et al.	437	67	05/19/1995
	US-5,767,001	06/16/1998	Bertagnolli, Emmerich , et al.	438	455	05/22/1994
	US-5,781,746	07/14/1998	Fleck, R.	395	306	05/12/1997
	US-5,786,628	07/28/1998	Beilstein Jr., K. E., et al.	257	684	10/16/1997
	US-5,807,783	09/15/1998	Gaul, , et al.	438	406	10/07/1996
	US-5,821,624	10/13/1998	Pasch, N. F.	257	776	06/05/1995
	US-5,834,799	11/10/1998	Rostoker, M. D., et al.	257	98	07/15/1996
	US-5,855,735	01/05/1999	Takada, S. , et al.	156	636.1	10/03/1995
	US-5,861,666	01/19/1999	Bellaar, Pieter H.	257	686	08/29/1996
	US-5,901,050	05/04/1999	Imai, Ryuji	361	820	08/21/1997
	US-5,902,118	05/11/1999	Hubner, Holger	438	106	07/03/1995
	US-5,903,045	05/11/1999	Bertin, Claude L., et al.	257	621	04/30/1996
	US-5,915,167	06/22/1999	Leedy, Glenn J.	438	108	04/04/1997
	US-5,990,550	11/23/1999	Umezawa, K	257	712	03/27/1998
	US-5,991,161	11/23/1999	Samaras, William A., et al.	361	760	12/19/1997
	US-6,016,256	01/18/2000	Crane Jr., S. W., et al.	361	813	11/14/1997
	US-6,137,164	10/24/2000	Yew, C. , et al.	257	686	09/22/1999
	US-6,223,273	04/24/2001	Kanekawa, N. , et al.	712	33	03/18/1999
	US-6,281,042	08/28/2001	Ahn, K. Y., et al.	438	108	08/31/1998

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T <sup>2</sup>
	JP-05-129666	05/25/1993	Horiuchi, M. , et al.			
	JP-4-133472	05/07/1992	Ishimura, H.			
	WO-94/05039	03/03/1994	Capps, David A., et al.	H01L	23/48	

EXAMINER

DATE CONSIDERED

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)	Complete if Known	
	Application Number	Unknown
	Filing Date	Even Date Herewith
	First Named Inventor	Ahn, Kie
	Group Art Unit	Unknown
	Examiner Name	Unknown
Sheet 3 of 5	Attorney Docket No: 303.533US2	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		BEDDINGFIELD, C. , et al., "Flip Chip Assembly of Motorola Fast Static RAM Known Good Die", <u>1997 Proceedings, 47th Electronic Components and Technology Conference, San Jose, CA,(May 18-21, 1997),643-648</u>	
		BLALOCK, T. N., et al., "A High-Speed Clamped Bit-Line Current-Mode Sense Amplifier", <u>IEEE Journal of Solid-State Circuits, 26(4), (April 1991),542-548</u>	
		CAO, L. , et al., "A Novel "Double-Decker" Flip-Chip/BGA Package for Low Power Giga-Hertz Clock Distribution", <u>1997 Proceedings, 47th Electronic Components and Technology Conference, San Jose, CA,(May 18-21, 1997),1152-1157</u>	
		CRISP, R. , "Development of Single-Chip Multi-GB/s DRAMs", <u>Digest of International Solid-State Circuits Conference, (1997),226-227</u>	
		CRISP, R. , "Rambus Technology, the Enabler", <u>Conference Record of WESCON, Anaheim, CA,(Nov. 17-19, 1992),160-165</u>	
		DEMMIN, J. , "nCHIP's Silicon Circuit Board Technology", <u>National Electronic Packaging and Production Conference, NEPCON West 94, 3, Proceedings of the Technical Program,(1993),2038-9</u>	
		DONNELLY, K. S., et al., "A 660MB/s Interface Megacell Portable Circuit in -.3 mum-0.7 mum CMOS ASIC", <u>IEEE Journal of Solid-State Circuits, Vol. 32, (Dec. 1996),1995-2003</u>	
		FEINBERG, I. , et al., "Interposer for Chip-on-Chip Module Attachment", <u>IBM Technical Disclosure Bulletin, 26(9), (February 1984),4590-91</u>	
		FOSTER, R. , et al., "High Rate Low-Temperature Selective Tungsten", <u>In: Tungsten and Other Refractory Metals for VLSI Applications III, V.A. Wells, ed., Materials Res. Soc., Pittsburgh, PA,(1988),69-72</u>	
		GOODMAN, T. , et al., "The Flip Chip Market", <u>Advanced Packaging, (Sept/Oct 1997),24-25</u>	
		GRAY, P. R., et al., "Analysis and Design of Analog and Integrated Circuits", <u>John Wiley and Sons, 2nd ed., (1984),617-622</u>	
		HEREMANS, P , et al., "Optoelectronic Integrated Receiver for Inter-MCM and Inter-Chip Optical Interconnects", <u>Technical Digest, International Electron Devices Meeting, (December 1996),657-660</u>	
		HORIE, H. , et al., "Novel High Aspect Ratio Aluminum Plug for Logic/DRAM LSI's Using Polysilicon-Aluminum Substitute", <u>Technical Digest: IEEE International Electron Devices Meeting, San Francisco, CA,(1996),946-948</u>	
		HOROWITZ, M. , et al., "PLL Design for a 500mbs Interface", <u>Dig. International Solid-State Circuits Conference, (1993),160-161</u>	
		HUTH, N. , "Next-Generation Memories", <u>Elektronik, 42(23), (1993),36-44</u>	
		KRISHNAMOORTHY, A. V., et al., "Ring Oscillators with Optical and Electrical Readout Based on Hybrid GaAs MQW Modulators Bonded to 0.8 Micron Silicon VLSI Cricuits", <u>Electronics Lett. 31(22), (October 26, 1995),1917-18</u>	
		LEE, T. H., et al., "A 2.5V Delay-Locked Loop for an 18Mb 500MB/s DRAM",	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1448)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.<sup>1</sup> Applicant's unique citation designation number (optional) <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Application Number	Unknown
Filing Date	Even Date Herewith
First Named Inventor	Ahn, Kie
Gr up Art Unit	Unknown
Examiner Name	Unknown

Sheet 4 of 5

Attorney Docket No: 303.533US2

**OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		Digest of International Solid-State Circuits Conference, (1994),300-301	
		LEHMANN, V. , "The Physics of Macropore Formation in Low Doped n-Type Silicon", Journal of the Electrochemical Society, 140(10), (Oct. 1993),2836-2843	
		LIN, C. M., et al., "Precision Embedded Thin Film Resistors for Multichip Modules (MCM-D)", Proceedings IEEE Multichip Module Conference, (1997),44-9	
		MIMURA, T. , et al., "System Module: a New Chip-on-Chip Module Technology", Proceedings of 1997 IEEE Custom Integrated Circuit Conference, (1997),439-442	
		MULLER, K. , et al., "Trench Storage Node Technology for Gigabit DRAM Generations", Digest IEEE International Electron Devices Meeting, San Francisco, CA,(Dec. 1996),507-510	
		OHBA, T. , et al., "Evaluation on Selective Deposition of CVD W Films by Measurement of Surface Temperature", In: Tungsten and Other Refractory Metals for VLSI Applications II, Materials Research Society, Pittsburgh, PA,(1987),59-66	
		OHBA, T. , et al., "Selective Chemical Vapor Deposition of Tungsten Using Silane and Polysilane Reductions", In: Tungsten and Other Refractory Metals for VLSI Applications IV, Materials Research Society, Pittsburgh, PA,(1989),17-25	
		PATEL, N. G., et al., "Thermoelectric Cooling Effect in a p-Sb <sub>2</sub> Te <sub>3</sub> /n-Bi <sub>2</sub> Te <sub>3</sub> Thin Film Thermocouple", Solid-State Electronics 35(9), (1992),1269-72	
		RAMO, S. , et al., Fields and Waves in Communication Electronics, Third Edition, John Wiley & Sons, Inc.,(1994),pp. 428-433	
		RUCKER, T. G., et al., "A High Performance SI on SI Multichip Module Technology", 1992 Symposium on VLSI Technology. Digest of Technical Papers, IEEE, Japanese Society of Applied Physics, 1992 Seattle, WA,(June 2-4 1992),72-73	
		SEKINE, et al., "A New High-Density Plasma Etching System Using a Dipole-Ring Magnet", Jpn. J. Appl. Phys., Pt. 1, No. 11, (November 1995),6274-6278	
		SERAPHIM, D. P., et al., "Principles of Electronic Packaging.", In: Principles of Electronic Packaging, McGraw-Hill, New York, NY,(1989),44, 190, 595-597	
		SHAFAL, C. , et al., "A Micro-Integrated Peltier Heat Pump for Localized On-chip Temperature Control.", Canadian Journal of Physics, 74, Suppl., No. 1, (1996),S139-142	
		SHAFAL, C. , et al., "Optimization of Bi <sub>2</sub> Te <sub>3</sub> Thin Films for Microintegrated Peltier Heat Pumps", Journal of Vacuum Science and Technology A, Second Series 15, No. 5, Preliminary Program, 44th National Symposium of the AVS, San Jose, CA,(Sept/Oct 1997),2798-2801	
		SU, D. K., et al., "Experimental Results and Modeling Techniques for Substrate Noise in Mixed-Signal Integrated Circuits", IEEE Journal of Solid-State Circuits, 28(4), (Apr. 1993),420-430	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE          STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)	Complete if Known	
	Application Number	Unknown
	Filing Date	Even Date Herewith
	First Named Inventor	Ahn, Kie
	Group Art Unit	Unknown
	Examiner Name	Unknown
Sheet 5 of 5	Attorney Docket No: 303.533US2	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		VARDAMAN, E. J., et al., "CSPs: Hot new packages for cool portable products", <u>Solid State Technology</u> , 40(10), (October 1997),84-89	
		VENDIER, O. , et al., "A 155 Mbps Digital Transmitter Using GaAs Thin Film LEDs Bonded to Silicon Driver Circuits", <u>Digest IEEE/LEOS 1996 Summer Topical Meetings</u> , Advanced Applications of Lasers in Materials and Processing,(1996),15-16	
		VUSIRIKALA, V. , et al., "Flip-chip Optical Fiber Attachment to a Monolithic Optical Receiver Chip", <u>SPIE Proceedings (The International Society for Optical Engineering)</u> , 2613, (October 24, 1995),52-58	

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached